1 Saline Control
2 PGF-2α – 1 hr 10 mM sperm.
3 PFG-2α – 1 hr 10 mM sperm. + 5 hr 1 mM sperm.

FIG. 1

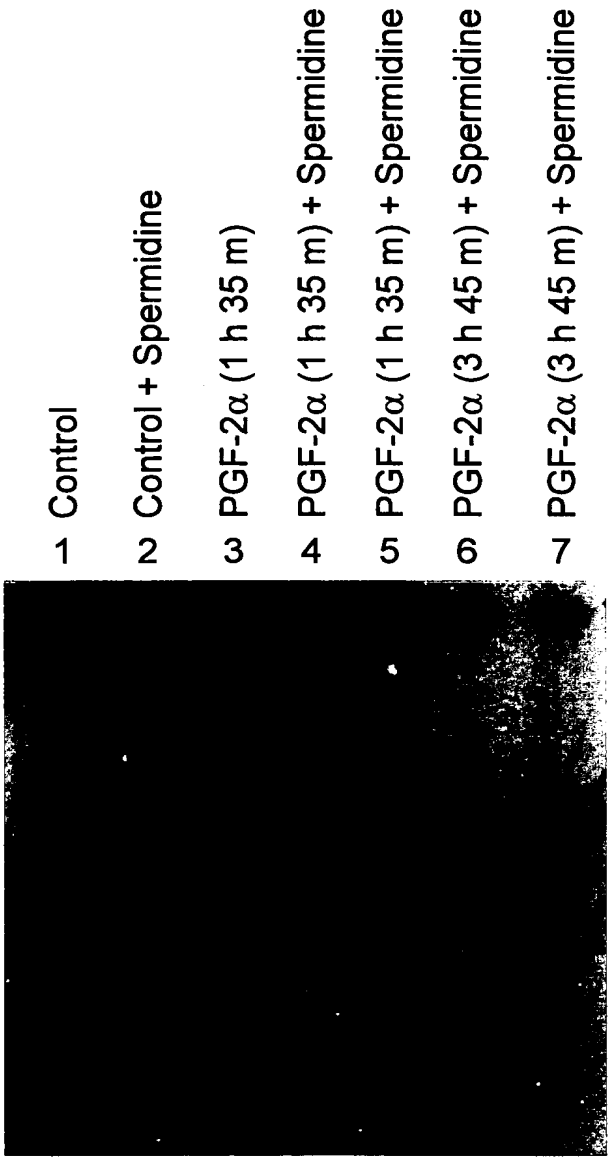

FIG.2

TCGAAGACCGGTAAGCACGGCCATGCCAAGGTCCATCTGGTTGGTATTGATATTTTTACTGGGAAGAAATAT
S K T G K H G H A K V H L V G I D I F T G K K Y
GAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGC
E D I C P S T H N M D V P N I K R N D F Q L I G
ATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGA
I Q D G Y L S L L Q D S G E V R E D L R L P E G
GACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCCATG
D L G K E I E Q K Y D C G E E I L I T V L S A M
ACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA**TAA**CTGGCTTCCAGGGTGGCGGTGGTGGCAGCA
T E E A A V A I K A M A K
GTGATCCATGAGCCTACAGAGGCCCCTCCCCCAGCTCTGGCTGGGCCCTTGGCTGGACTCCTATCCAATTTA
TTTGACGTTTTATTTTGGTTTTCCTCACCCCTTCAAACTGTCGGGGAGACCCTGCCCTTCACCTAGCTCCCT
TGGCCAGGCATGAGGGAGCCATGGCCTTGGTGAAGCTACCTGCCTCTTCTCTCGCAGCCCTGATGGGGGAAA
GGGAGTGGGTACTGCCTGTGGTTTAGGTTCCCCTCTCCCTTTTTCTTTTTAATTCAATTTGGAATCAGAAAG
CTGTGGATTCTGGCAAATGGTCTTGTGTCCTTTATCCCACTCAAACCCATCTGGTCCCCTGTTCTCCATAGT
CCTTCACCCCCAAGCACCACTGACAGACTGGGGACCAGCCCCCTTCCCTGCCTGTGTCTCTTCCCAAACCCC
TCTATAGGGGTGACAAGAAGAGGAGGGGGGGAGGGGACACGATCCCTCCTCAGGCATCTGGGAAGGCCTTGC
CCCCATGGGCTTTACCCTTTCCTGTGGGCTTTCTCCCTGACACATTTGTTAAAAATCAAACCTGAATAAAAC
TACAAGTTTAATATGAAAAAAAAAAAAAAAAAAAA
(972 NT, 109 aa)

FIG.3

```
CAGGTCTAGAGTTGGAATCGAAGCCTCTTAAAATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGG
                                    M  A  D  D  L  D  F  E  T  G  D  A  G
CCTCAGCCACCTTCCCAATGCAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAGGGCCGGCCAT
A  S  A  T  F  P  M  Q  C  S  A  L  R  K  N  G  F  V  V  L  K  G  R  P
GTAAGATCGTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGTATTG
C  K  I  V  E  M  S  T  S  K  T  G  K  H  G  H  A  K  V  H  L  V  G  I
ATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAA
D  I  F  T  G  K  K  Y  E  D  I  C  P  S  T  H  N  M  D  V  P  N  I  K
GGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAG
R  N  D  F  Q  L  I  G  I  Q  D  G  Y  L  S  L  L  Q  D  S  G  E  V  R
AGGACCTTCGTCTGCCTGAGGGAGACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCC
E  D  L  R  L  P  E  G  D  L  G  K  E  I  E  Q  K  Y  D  C  G  E  E  I
TGATCACAGTGCTGTCCGCCATGACAGAGGAGGCAGCTGTTGCAATCAAGGCTCGAG
L  I  T  V  L  S  A  M  T  E  E  A  A  V  A  I  K  A
```

(488 NT, 151 aa)

FIG.4

```
CAGGTCTAGAGTTGGAATCGAAGCCTCTTAAAATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGG
                                  M  A  D  D  L  D  F  E  T  G  D  A  G      13
CCTCAGCCACCTTCCCAATGCAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAGGGCCGGCCAT   144
A  S  A  T  F  P  M  Q  C  S  A  L  R  K  N  G  F  V  V  L  K  G  R  P
GTAAGATCGTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGTATTG
C  K  I  V  E  M  S  T  S  K  T  G  K  H  G  H  A  K  V  H  L  V  G  I      61
ATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAA   288
D  I  F  T  G  K  K  Y  E  D  I  C  P  S  T  H  N  M  D  V  P  N  I  K
GGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAG
R  N  D  F  Q  L  I  G  I  Q  D  G  Y  L  S  L  L  Q  D  S  G  E  V  R    109
AGGACCTTCGTCTGCCTGAGGGAGACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCC   432
E  D  L  R  L  P  E  G  D  L  G  K  E  I  E  Q  K  Y  D  C  G  E  E  I
TGATCACAGTGCTGTCCGCCATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAATAACTGGCTT
L  I  T  V  L  S  A  M  T  E  E  A  A  V  A  I  K  A  M  A  K  *          154
CCAGGGTGGCGGTGGTGGCAGCAGTGATCCATGAGCCTACAGAGGCCCCTCCCCCAGCTCTGGCTGGGCCCT   576
TGGCTGGACTCCTATCCAATTTATTTGACGTTTTATTTTGGTTTTCCTCACCCCTTCAAACTGTCGGGGAGA
CCCTGCCCTTCACCTAGCTCCCTTGGCCAGGCATGAGGGAGCCATGGCCTTGGTGAAGCTACCTGCCTCTTC   720
TCTCGCAGCCCTGATGGGGGAAAGGGAGTGGGTACTGCCTGTGGTTTAGGTTCCCCTCTCCCTTTTTCTTTT
TAATTCAATTTGGAATCAGAAAGCTGTGGATTCTGGCAAATGGTCTTGTGTCCTTTATCCCACTCAAACCCA   864
TCTGGTCCCCTGTTCTCCATAGTCCTTCACCCCCAAGCACCACTGACAGACTGGGGACCAGCCCCCTTCCCT
GCCTGTGTCTCTTCCCAAACCCCTCTATAGGGGTGACAAGAAGAGGAGGGGGGGAGGGGACACGATCCCTCC  1008
TCAGGCATCTGGGAAGGCCTTGCCCCCATGGGCTTTACCCTTTCCTGTGGGCTTTCTCCCTGACACATTTGT
TAAAAATCAAACCTGAATAAAACTACAAGTTTAATATGAAAAAAAAAAAAAAAAAAAAA               1139
```

(1139 NT, 154 aa)

FIG.5

rat vs. human(BC000751 or NM_001970) 96.5% identity (coding)

```
              10        20        30        40        50        60
rat    ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG
       :::::::::: :::::::::::::::::::::::::::::::::::::::::::::::
human  ATGGCAGATGACTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG
              10        20        30        40        50        60

              70        80        90       100       110       120
rat    CAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAGGGCCGGCCATGTAAGATC
       ::::::::::::::::::::::::: :::::::::::::: ::::::::::::::::::
human  CAGTGCTCAGCATTACGTAAGAATGGCTTTGTGGTGCTCAAAGGCCGGCCATGTAAGATC
              70        80        90       100       110       120

             130       140       150       160       170       180
rat    GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGT
       :::::::::::::::::::::::::::::::: ::::: ::::::::::::::::::::
human  GTCGAGATGTCTACTTCGAAGACTGGCAAGCACGGCCACGCCAAGGTCCATCTGGTTGGT
             130       140       150       160       170       180

             190       200       210       220       230       240
rat    ATTGATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT
       ::::: :: ::::::::::::::::::::::::::::::::::: :::::::: ::::::
human  ATTGACATCTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCAACTCATAATATGGAT
             190       200       210       220       230       240

             250       260       270       280       290       300
rat    GTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC
       :::::::::::::::::::::: ::::::::::::::::::::::::::::::::::::
human  GTCCCCAACATCAAAAGGAATGACTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCA
             250       260       270       280       290       300

             310       320       330       340       350       360
rat    CTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGAGACCTTGGC
       :::::::::::::: :::::::::::::::::::::::::::::: ::::::::::::::
human  CTGCTCCAGGACAGCGGGGAGGTACGAGAGGACCTTCGTCTCCCTGAGGGAGACCTTGGC
             310       320       330       340       350       360

             370       380       390       400       410       420
rat    AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCC
       :::::::::::::::::::: :::::::::::::::::::::::::: :::::::: :::
human  AAGGAGATTGAGCAGAAGTACGACTGTGGAGAAGAGATCCTGATCACGGTGCTGTCTGCC
             370       380       390       400       410       420

             430       440       450       460
rat    ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA
       ::::::::::::::::::::::::::::::::::::::::::
human  ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA
       430       440       450       460
```

FIG.6

rat vs. human(NM_020390) 72.5% identity (coding)

```
            10        20        30        40        50        60
rat   ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG
      :::::::: :: :  : :: :::   :: :::::: ::::: ::   ::: : ::: :::
human ATGGCAGACGAAATTGATTTCACTACTGGAGATGCCGGGGCTTCCAGCACTTACCCTATG
            10        20        30        40        50        60

            70        80        90       100       110       120
rat   CAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAGGGCCGGCCATGTAAGATC
      :::::::: :: :: :: :: :: :: :: :::::::::::: :: :: ::::: :: ::
human CAGTGCTCGGCCTTGCGCAAAAACGGCTTCGTGGTGCTCAAAGGACGACCATGCAAAATA
            70        80        90       100       110       120

           130       140       150       160       170       180
rat   GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGT
      :: :::::::: ::::: :: ::::: :::::::: :::::::::::: :: ::: :::::
human GTGGAGATGTCAACTTCCAAAACTGGAAAGCATGGTCATGCCAAGGTTCACCTTGTTGGA
           130       140       150       160       170       180

           190       200       210       220       230       240
rat   ATTGATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT
      :::::::::: :: :: :: :::::::::::::: :: :: :: ::::: :::::::::
human ATTGATATTTTCACGGGCAAAAAATATGAAGATATTTGTCCTTCTACTCACAACATGGAT
           190       200       210       220       230       240

           250       260       270       280       290       300
rat   GTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC
      :: :: :: :: :: :: :::::::  :: :::::  :::: :: ::::: ::::: :::
human GTTCCAAATATTAAGAGAAATGATTATCAACTGATATGCATTCAAGATGGTTACCTTTCC
           250       260       270       280       290       300

           310       320       330       340       350       360
rat   CTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGAGACCTTGGC
      :::::    :: : ::: :: :: :: ::::: :::   ::::: :: :: :: :: :::
human CTGCTGACAGAAACTGGTGAAGTTCGTGAGGATCTTAAACTGCCAGAAGGTGAACTAGGC
           310       320       330       340       350       360

           370       380       390       400       410       420
rat   AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCC
      :: :: :: :::   :: ::  :    :: :::::  : : : :  : ::  :::  ::
human AAAGAAATAGAGGGAAAATACAATGCAGGTGAAGATGTACAGGTGTCTGTCATGTGTGCA
           370       380       390       400       410       420

           430       440       450       460
rat   ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA
      ::::  :: ::    ::::: :: :: ::  ::   :::::
human ATGAGTGAAGAATATGCTGTAGCCATAAAACCCT--GCAAAT
           430       440       450        460
```

FIG.7

rat vs. mouse (BC003889) 98.3% identity (coding)

```
              10        20        30        40        50        60
rat   ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
mouse ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG
              10        20        30        40        50        60

              70        80        90       100       110       120
rat   CAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAGGGCCGGCCATGTAAGATC
      :::::::::::::::::::::::::::::::::::::::: ::::::::::::::::::
mouse CAGTGCTCAGCATTACGTAAGAATGGTTTTGTGGTGCTCAAAGGCCGGCCATGTAAGATC
              70        80        90       100       110       120

             130       140       150       160       170       180
rat   GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGT
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
mouse GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGC
             130       140       150       160       170       180

             190       200       210       220       230       240
rat   ATTGATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT
      ::::: ::::::::::::::::::::::::::::::::::::::::::: ::::::::::
mouse ATTGACATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAATATGGAT
             190       200       210       220       230       240

             250       260       270       280       290       300
rat   GTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC
      :::::::::::::::: :::::::: ::::::::::::::::::::::::::::::::::
mouse GTCCCCAACATCAAACGGAATGACTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC
             250       260       270       280       290       300

             310       320       330       340       350       360
rat   CTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGAGACCTTGGC
      :::::::::::::::::::::::::::::::::::::::::::::::::: ::::::::::::
mouse CTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAAGGAGACCTTGGC
             310       320       330       340       350       360

             370       380       390       400       410       420
rat   AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCC
      :::::::::::::::::::::::::::::::::::::::::::::::::::::::::::: :::
mouse AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCTGCC
             370       380       390       400       410       420

             430       440       450       460
rat   ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA
      ::::::::::::::::::::::::::::::::::::::::::
mouse ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA
             430       440       450       460
```

FIG.8

rat vs. human(BC000751 or NM_001970) 100.0% identity

```
              10        20        30        40        50        60
rat   MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
human MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
              10        20        30        40        50        60

              70        80        90       100       110       120
rat   IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
human IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG
              70        80        90       100       110       120

             130       140       150
rat   KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK
      ::::::::::::::::::::::::::::::::::
human KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK
             130       140       150
```

FIG.9

rat vs. human(NM_020390) 82.5% identity

```
              10        20        30        40        50        60
rat   MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
      :::..:: ::::::::.:.:::::::::::::::::::::::::::::::::::::::::
human MADEIDFTTGDAGASSTYPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
              10        20        30        40        50        60

              70        80        90       100       110       120
rat   IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG
      :::::::::::::::::::::::::::.::: ::::::::: ..:::::::.::::.::
human IDIFTGKKYEDICPSTHNMDVPNIKRNDYQLICIQDGYLSLLTETGEVREDLKLPEGELG
              70        80        90       100       110       120

             130       140       150
rat   KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK
      :::: ::. ::.. ..:. ::.:: :::::   :
human KEIEGKYNAGEDVQVSVMCAMSEEYAVAIKP-CK
             130       140       150
```

FIG.10

rat vs. mouse (BC003889)100.0% identity

```
              10        20        30        40        50        60
rat   MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
mouse MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG
              10        20        30        40        50        60

              70        80        90       100       110       120
rat   IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
mouse IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG
              70        80        90       100       110       120

             130       140       150
rat   KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK
      ::::::::::::::::::::::::::::::::
mouse KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK
             130       140       150
```

FIG. 11

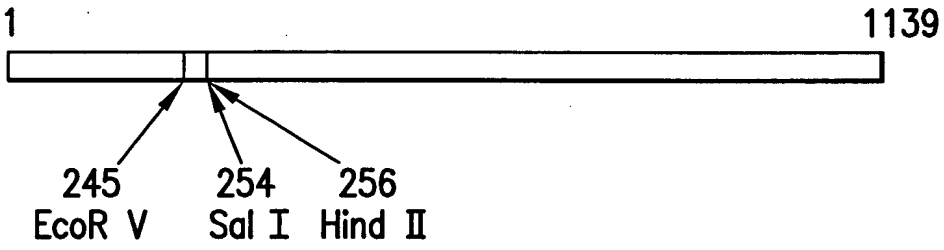

FIG.12

SOUTHERN BLOT OF RAT GENOMIC DNA

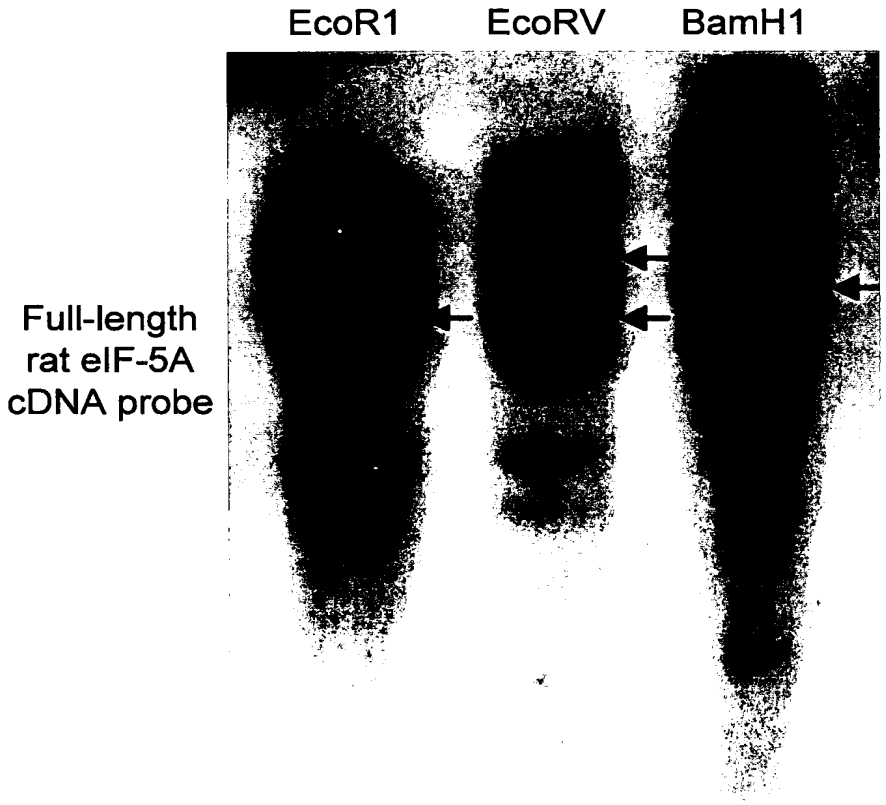

FIG. 13

FIG.14

```
GCTGTGTATTATTGGGCCCATAAGAACCACATACCTGTGCTGAGTCCTGCACTCACAGACGGCTCACTGGGT
 A  V  Y  Y  W  A  H  K  N  H  I  P  V  L  S  P  A  L  T  D  G  S  L  G
GACATGATCTTTTTCCATTCCTATAAAAACCCAGGCTTGGTCCTGGACATCGTTGAAGACCTGCGGCTCATC
 D  M  I  F  F  H  S  Y  K  N  P  G  L  V  L  D  I  V  E  D  L  R  L  I
AACATGCAGGCCATTTTCGCCAAGCGCACTGGGATGATCATCCTGGGTGGAGGCGTGGTCAAGCACCACATC
 N  M  Q  A  I  F  A  K  R  T  G  M  I  I  L  G  G  G  V  V  K  H  H  I
GCCAATGCTAACCTCATGCGGAATGGAGCTGACTACGCTGTTTATATCAACACAGCCCAGGAGTTTGATGGC
 A  N  A  N  L  M  R  N  G  A  D  Y  A  V  Y  I  N  T  A  Q  E  F  D  G
TCAGACTCAGGAGCCCGGCCAGATGAGGCTGTCTCCTGGGGCAAGATCCGGATGGATGCACAGCCAGTAAAG
 S  D  S  G  A  R  P  D  E  A  V  S  W  G  K  I  R  M  D  A  Q  P  V  K
GTCTATGCTGATGCATCTCTGGTTTTCCCCTTGCTGGTGGCTGAGACATTCGCCCAAAAGGCAGATGCCTTC
 V  Y  A  D  A  S  L  V  F  P  L  L  V  A  E  T  F  A  Q  K  A  D  A  F
AGAGCTGAGAAGAATGAGGACTGAGCAGATGGGTAAAGACGGAGGCTTCTGCCACACCTTTATTTATTATTT
 R  A  E  K  N  E  D
GCATACCAACCCCTCCTGGGCCCTCTCCTTGGTCAGCAGCATCTTGAGAATAAATGGCCTTTTTGTTGGTTT
CTGTAAAAAAAGGACTTTAAAAAAAAAAAA
```

(606 NT, 151 aa)

FIG.15

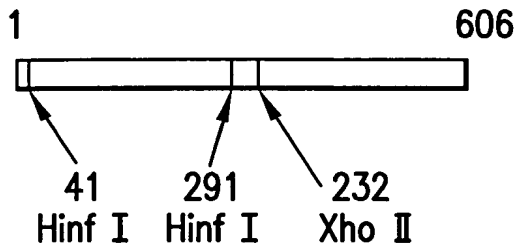

FIG.16

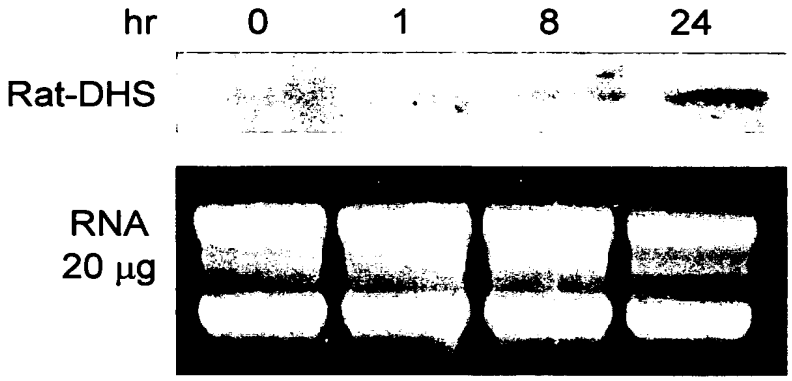

FIG. 17

rat vs. human (BC000333) 87.4% identity (coding)

```
              10        20        30        40        50        60
rat    GCTGTGTATTATTGGGCCCATAAGAACCACATACCTGTGCTGAGTCCTGCACTCACAGAC
        : :::::::: :::::::: :::::::::: :::::: : ::::: ::::: ::::::
human  TCCGTGTATTACTGGGCCCAGAAGAACCACATCCCTGTGTTTAGTCCCGCACTTACAGAC
              10        20        30        40        50        60

              70        80        90       100       110       120
rat    GGCTCACTGGGTGACATGATCTTTTTCCATTCCTATAAAAACCCAGGCTTGGTCCTGGAC
       ::::: ::::: :::::::::: :::::::::: :: ::::: ::: ::::::::::
human  GGCTCGCTGGGCGACATGATCTTCTTCCATTCCTACAAGAACCCGGGCCTGGTCCTGGAC
              70        80        90       100       110       120

             130       140       150       160       170       180
rat    ATCGTTGAAGACCTGCGGCTCATCAACATGCAGGCCATTTTCGCCAAGCGCACTGGGATG
       :::::::: :::::: ::::::::::::  :::::::: :: :::::: ::::::::::
human  ATCGTTGAGGACCTGAGGCTCATCAACACACAGGCCATCTTTGCCAAGTGCACTGGGATG
             130       140       150       160       170       180

             190       200       210       220       230       240
rat    ATCATCCTGGGTGGAGGCGTGGTCAAGCACCACATCGCCAATGCTAACCTCATGCGGAAT
       ::::: ::::: :: :::::::::::::::::::: :::::::: ::::::::::::::
human  ATCATTCTGGGCGGGGGCGTGGTCAAGCACCACATTGCCAATGCCAACCTCATGCGGAAC
             190       200       210       220       230       240

             250       260       270       280       290       300
rat    GGAGCTGACTACGCTGTTTATATCAACACAGCCCAGGAGTTTGATGGCTCAGACTCAGGA
       :: :: :::::::::::::: :::::::::::::::::::::::::::::: ::::::::
human  GGGGCCGACTACGCTGTTTACATCAACACAGCCCAGGAGTTTGATGGCTCTGACTCAGGT
             250       260       270       280       290       300

             310       320       330       340       350       360
rat    GCCCGGCCAGATGAGGCTGTCTCCTGGGGCAAGATCCGGATGGATGCACAGCCAGTAAAG
       ::::: ::::: :::::::::::::::::::::::::::: :::::::::::: :: :::
human  GCCCGACCAGACGAGGCTGTCTCCTGGGGCAAGATCCGGGTGGATGCACAGCCCGTCAAG
             310       320       330       340       350       360

             370       380       390       400       410       420
rat    GTCTATGCTGATGCATCTCTGGTTTTCCCCTTGCTGGTGGCTGAGACATTCGCCCAAAAG
       :::::::::: :: :: ::::: :::::: :::: :::::::: :: :: ::::: :::
human  GTCTATGCTGACGCCTCCCTGGTCTTCCCCCTGCTTGTGGCTGAAACCTTTGCCCAGAAG
             370       380       390       400       410       420

              430       440       450
rat    GCAGATGCCTTCAGAGCTGAGAAGAATGAGGAC
         ::::::::::    ::::::::: ::::::
human  ATGGATGCCTTCATGCATGAGAAGAACGAGGAC
              430       440       450
```

FIG.18

FIG. 19

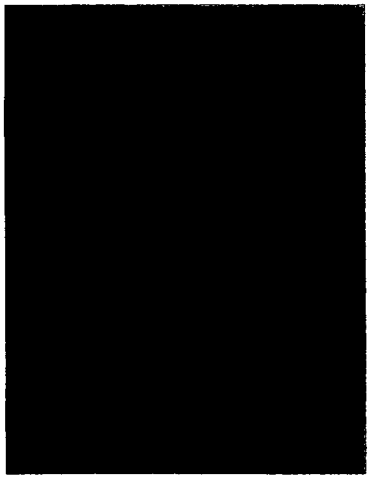

FIG.20

Southern Blot of Rat Genomic DNA

EcoRV

Partial rat DHS cDNA probe

FIG.21